

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>I-2-0459.1WO</b>	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416																								
International application No. <b>PCT/US04/07496</b>	International filing date (day/month/year) <b>12 March 2004 (12.03.2004)</b>	Priority date (day/month/year) <b>14 March 2003 (14.03.2003)</b>																									
International Patent Classification (IPC) or national classification and IPC <b>IPC(7): H04J 3/00 and US Cl.: 370/345</b>																											
Applicant <b>INTERDIGITAL TECHNOLOGY CORPORATION</b>																											
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows:</p> <div style="margin-left: 40px;"> <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).  <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.         </div> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																											
<p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>				<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I	Basis of the report																									
<input type="checkbox"/>	Box No. II	Priority																									
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																									
<input type="checkbox"/>	Box No. IV	Lack of unity of invention																									
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																									
<input type="checkbox"/>	Box No. VI	Certain documents cited																									
<input type="checkbox"/>	Box No. VII	Certain defects in the international application																									
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																									
Date of submission of the demand <b>09 December 2004 (09.12.2004)</b>		Date of completion of this report <b>03 February 2005 (03.02.2005)</b>																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Chi Pham <i>Rugenia Logan</i> Telephone No. 571-272-3179																									

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/07496

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-10 \_\_\_\_\_ as originally filed/furnished

pages\* NONE \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* NONE \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the claims:

pages NONE \_\_\_\_\_ as originally filed/furnished

pages\* NONE \_\_\_\_\_ as amended (together with any statement) under Article 19

pages\* 11-13 \_\_\_\_\_ received by this Authority on 09 December 2004 (09.12.2004)

pages\* NONE \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the drawings:

pages 1-3 \_\_\_\_\_ as originally filed/furnished

pages\* NONE \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* NONE \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/figs \_\_\_\_\_  
☐ the sequence listing (*specify*): \_\_\_\_\_  
☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/figs \_\_\_\_\_  
☐ the sequence listing (*specify*): \_\_\_\_\_  
☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US04/07496**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)

Claims 1-11 YESClaims NONE NO

Inventive Step (IS)

Claims 1-11 YESClaims NONE NO

Industrial Applicability (IA)

Claims 1-11 YESClaims NONE NO**2. Citations and Explanations (Rule 70.7)**

Claims 1-11 meet the criteria set out in PCT Article 33(2)-(4) because the prior art does not each or fairly suggest providing a correction factor corresponding to a saturation value, as specified in independent claim 1. The prior art does not teach or fairly suggest using a number of samples to perform a comparison and generating a response to the comparison, as specified in independent claim 3. The prior art does not teach or fairly suggest an erase circuit for comparing the number with a second threshold and determining if the number exceeds the second threshold, whereby the segment of data is erased when second threshold is exceeded, as specified in independent claim 10.

----- NEW CITATIONS -----

NONE

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

## CLAIMS

What is claimed is:

1. A method for determining, in a timeslot, the initial setting of a gain control loop; the gain control loop being included in a receiver of a communication system which utilizes repeating frames, each frame having a plurality of timeslots; the method comprising:

storing the setting of the gain control loop for a particular timeslot;

retrieving said stored setting in the corresponding timeslot of a subsequent frame;

providing a correction factor corresponding to a saturation value;

and

adjusting said setting by [a] said correction factor to provide said initial setting.

2. The method of claim 1 wherein said correction factor is  $10^{\Delta/20}$ , where  $\Delta$  is a predetermined offset.

3. A method for determining the setting of a gain control loop; the gain control loop being included in a receiver of a communication system which utilizes repeating frames, each frame having a plurality of timeslots; the method comprising:

receiving a segment of data, the segment of data comprising a plurality of samples;

determining, from said plurality of samples, the number of said samples which exceed a first threshold;

setting the gain of the gain control loop for a particular timeslot based, at least in part, upon said number and

using said number to perform a comparison and generating a response in response to said comparison.

4. The method of claim 3, wherein said segment of data includes a first portion whereby samples are examined and a second portion whereby samples are not examined.

5. The method of claim 4 wherein said first portion is a sampling period and said second portion is a skip period.

6. The method of claim 3, further comprising adjusting said gain by a power correction factor.

7. The method of claim 6, wherein said power correction factor depends, at least in part, upon said number.

8. The method of claim 7, further comprising a lookup table, which receives said number and outputs said power correction factor.

9. The method of claim 3, further comprising comparing said number to a second threshold; whereby if said second threshold is exceeded, said segment of data is deleted.

10. An automatic gain control (AGC) circuit, comprising:  
an AGC loop, for receiving a segment of data comprising a plurality of samples; the AGC loop determining a gain setting and outputting said segment of data;  
a saturation detection circuit, responsive to said output from said AGC loop, for determining the number of samples which exceed a first threshold; and  
an erase circuit, for comparing said number with a second threshold, and determining if said number exceeds said second threshold; whereby said segment is erased when said second threshold is exceeded.

11. The AGC circuit of claim 10, wherein said saturation detection circuit further comprises a look-up table, for receiving said number and outputting a corresponding power correction factor; and

wherein said AGC loop adjusts said gain setting responsive, at least in part, to said power correction factor.